

**Notice of Allowability**

Application No.

09/975,152

Examiner

Robert W. Wilson

Applicant(s)

PARK ET AL.

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/12/2001.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 10/12/01
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**BOB PHUNKULH**  
**PRIMARY EXAMINE**

*Allowable Subject Matter*

1. The present invention is directed to a code division multiple access base station. The base station system comprises: an array antenna receiving a signal; a multi-channel down-conversion means for down-converting the signal received through the array antenna to generate a digital signal; a calibration means; a two-dimensional searching means for spatial-filtering the digital signal to generate a spatial-filtered signal and correlating with spatial-filtered digital signal with a pseudo noise (PN) to thereby detect the signal and acquire the corresponding code timing; and an adaptive array demodulation means for performing a beamforming operation and demodulating received data through a despreader and a rake receiver

The closest prior art is Scherzer (U.S. Patent No.: 6,347,234). Scherzer teaches: The base station system per Fig 1 which comprises: 40 per Fig 1 and per col. 6 lines 39-45 or an array antenna receiving a signal; 101 per Fig 1 and per col. 6 line 50-54 or a multi-channel down-conversion means for down-converting the signal received through the array antenna to generate a digital signal; a common local oscillator 104 per Fig 1 and per col. 6 lines 59-67 which is used to correct for phase and amplitude different or correct for transfer function errors or calibration means; a single dimensional spatial correlator determines the direction of the signal by correlating the received signal with a matched signal and also has 112 per Fig 1 which performs beamforming in conjunction with the RakeReceiver 113 per Fig 1 or demodulation means. Scherzer does not teach: a two-dimensional searching means for spatial-filtering the digital signal to generate a spatial-filtered signal and correlating with spatial-filtered digital signal with a pseudo noise (PN) to thereby detect the signal and acquire the corresponding code timing;

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The closest prior art Scherzer does not anticipate or render obvious the following claim limitation:

“a two-dimensional searching means for spatial-filtering the digital signal to generate a spatial-filtered signal and correlating with spatial-filtered digital signal with a pseudo noise (PN) to thereby detect the signal and acquire the corresponding code timing” as claimed in claim 1.

“means for dividing a sector into a plurality of subsectors; a plurality of beamforming networks each for spatial filtering the digital signal by forming an antenna beam steering the corresponding subsector” as claimed in claim 3.

“correlating the spatial-filtered digital signal with a PN code to thereby detect the signal and estimating an angle range of the signal using an angle region of the subsector in which the signal is detected. “ as claimed in claim 4.

In addition:

Claim 2 is allowed because they depend upon claim 1.

Claims 5-9 are allowed because they depend upon claim 4.

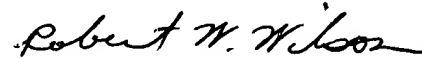
### ***Conclusion***

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 571/272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

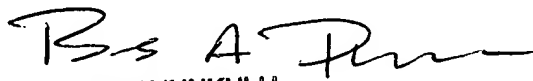
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert W Wilson  
Examiner  
Art Unit 2661

RWW  
10/18/05



**BOB PHUNKULH**  
**PRIMARY EXAMINER**